

Appl. No.: 10/582,320
Amdt. Dated: April 27, 2009
Reply to Office Action of January 28, 2009

AMENDMENTS

To the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A method of removing a residual gas from inside a conventional shipping container after a period of time in which goods were located in the container, the method comprising the steps of:

accessing the container via an end door opening of the container;

extracting at least some of the residual gas present in the container via the end door opening; and

providing a flow of a flushing gas into the container via the end door opening to flush residual gas from the container.
2. (Original) A method as claimed in claim 1 wherein the step of extracting the residual gas reduces gas pressure in the container below ambient atmospheric pressure outside the container.
3. (Original) A method as claimed in claim 2 wherein when the pressure of gas in the container reaches a pre-determined value, the flow of flushing gas is initiated and the gas pressure in the container increases.
4. (Original) A method of removing a residual gas from inside a conventional shipping container after a period of time in which goods were located in the container, the method comprising the steps of:

accessing the container via an end door opening of the container; and

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delivering a flow of a flushing gas into the container via the end door opening to flush the residual gas from the container, with a flow of the flushing gas and the residual gas being removed from the container via the end door opening.

5. (Previously Presented) A method as claimed in claim 1 wherein the flow and/or total pressure of gases within the container is monitored and controlled.

6. (Previously Presented) A method as claimed in claim 1 wherein a majority of the residual gas present in the container is extracted.

7. (Previously Presented) A method as claimed in claim 1 further comprising the step of absorbing/adsorbing at least part of the residual gas extracted from the container into/onto an absorption/adsorption means.

8. (Original) A method as claimed in claim 7 wherein substantially all of the extracted residual gas is absorbed/adsorbed into/onto the absorption/adsorption means.

9. (Previously Presented) A method as claimed in claim 7 further comprising the step of one of washing the absorption/adsorption means, decomposing the residual gas on the absorption/adsorption means and discarding the absorption/adsorption means.

10. (Previously Presented) A method as claimed in claim 1 wherein the step of accessing the container involves:

opening an end door of the container; and

operatively coupling a panel to the container at the end door opening, and operatively coupling a gas inlet means and a gas extraction port to the panel so that the container is sealed during the removal of the flushing gas and the residual gas from the container.

11. (Previously Presented) A method as claimed in claim 1 wherein the flushing gas is introduced via the gas inlet.

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12. (Previously Presented) A method as claimed in claim 10 wherein gas is extracted via the gas extraction port.

13. (Previously Presented) A method as claimed in claim 10 wherein the gas extraction port is operatively coupled at a lower region of the panel relative to the location of the gas inlet.

14. (Previously Presented) A method as claimed in claim 10 wherein the panel itself comprises a plurality of panels.

15. (Previously Presented) A method as claimed in claim 1 wherein the flushing gas is atmospheric air.

16. (Previously Presented) A method as claimed in claim 1 wherein the container is provided with apparatus for monitoring and controlling the pressure of gas in the container.

17. (Previously Presented) A method as claimed in claim 1 further comprising the step of monitoring the concentration of residual gas in the container.

18. (Original) A method of removing a residual gas that is present in an enclosure after a period of time in which goods were located in the enclosure, the method comprising the steps of:

accessing the enclosure via an opening to the enclosure;

operatively coupling a panel, a gas inlet means and a gas extraction means to the opening, whereby the panel sealingly attaches at the opening and the gas inlet means and the gas extraction means are operatively coupled to the panel;

extracting a flow of the residual gas via the gas extraction means until at least some of the residual gas present is removed; and

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providing a flow of a flushing gas into the enclosure via the gas inlet means to flush the residual gas from the enclosure.

19. (Original) A method as claimed in claim 18 wherein the step of extracting the residual gas reduces gas pressure in the enclosure below ambient atmospheric pressure outside the enclosure.

20. (Original) A method as claimed in claim 19 wherein when the pressure of residual gas in the enclosure reaches a pre-determined value, the flow of flushing gas is initiated and the gas pressure in the enclosure increases.

21. (Original) A method of removing a residual gas that is present in an enclosure after a period of time in which goods were located in the enclosure, the method comprising the steps of:

accessing the enclosure via an opening to the enclosure;

operatively coupling a panel having a gas inlet and a gas outlet to the opening, whereby the panel sealingly attaches at the opening;

delivering a flow of a flushing gas into the enclosure via the gas inlet to flush the residual gas from the enclosure, with a flow of the flushing gas and residual gas being removed from the enclosure via the gas outlet.

22. (Previously Presented) A method as claimed in claim 18 wherein the enclosure is defined by a conventional shipping container.

23. (Cancelled)

24. (Previously Presented) Residual gas removal apparatus arranged to be operatively coupled to an enclosure for removing residual gas from inside the enclosure, the apparatus comprising:

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- a panel arranged for operative coupling to the enclosure in a sealing manner;
- a gas inlet for operative coupling to the panel for introducing a flushing gas into the enclosure;
- gas extraction apparatus for operative coupling to the panel for extracting gas from the enclosure;
- a pressure monitoring device for monitoring the total pressure of gases within the enclosure; and
- a controller for controlling the flow of gases through at least one of the gas inlet and gas extraction apparatus in response to the monitored pressure within the enclosure.
25. (Previously Presented) Apparatus as claimed in claim 24 further comprising absorption/adsorption apparatus for absorbing/adsorbing residual gas extracted from the container.
26. (Previously Presented) Apparatus as claimed in claim 25 wherein the absorption/adsorption apparatus comprises an absorption/adsorption bed including activated carbon to which at least part of the extracted residual gas attaches at its surface and in its pores.
27. (Previously Presented) Apparatus as claimed in claim 24 wherein the residual gas removal apparatus also comprises a panel arranged in use to be coupled to the enclosure in a sealing manner, the gas inlet and the gas extraction apparatus being operatively coupled or mounted to the panel.
28. (Previously Presented) Apparatus arranged to be operatively coupled to an enclosure for removing residual gas from inside the enclosure, the apparatus comprising:
- a framework mountable onto a surface and locatable adjacent to the enclosure in use; and

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a member mounted to the framework and comprising a gas inlet for introducing a flushing gas into the enclosure, a gas extraction port for extracting gas from the enclosure and a coupler for coupling the member to the enclosure;

wherein the member is moveable between an in use coupled position in which the coupler couples the member to the enclosure and a de-coupled position in which the member is spaced from the enclosure.

29. (Original) Apparatus as claimed in claim 28 wherein the member is pivotally mounted to the framework.

30. (Previously Presented) Apparatus as claimed in claim 28 wherein the member further comprises a panel for coupling to an opening in the enclosure.

31. (Cancelled)

32. (Previously Presented) A method as claimed in claim 4 wherein the flow and/or total pressure of gases within the container is monitored and controlled.

33. (Previously Presented) A method as claimed in claim 4 wherein a majority of the residual gas present in the container is extracted.

34. (Previously Presented) A method as claimed in claim 4 further comprising the step of absorbing/adsorbing at least part of the residual gas extracted from the container into/onto an absorption/adsorption material.

35. (Previously Presented) A method as claimed in claim 34 wherein substantially all of the extracted residual gas is absorbed/adsorbed into/onto the absorption/adsorption material.

36. (Previously Presented) A method as claimed in claim 34 further comprising the step of one of washing the absorption/adsorption material, decomposing the residual gas on the absorption/adsorption material and discarding the absorption/adsorption material.

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37. (Previously Presented) A method as claimed in claim 4 wherein the step of accessing the container involves:

opening an end door of the container; and

operatively coupling a panel to the container at the end door opening, and operatively coupling a gas inlet means and a gas extraction apparatus to the panel so that the container is sealed during the removal of the flushing gas and the residual gas from the container.

38. (Previously Presented) A method as claimed in claim 37 wherein the flushing gas is introduced via the gas inlet.

39. (Previously Presented) A method as claimed in claim 37 wherein gas is extracted via the gas extraction apparatus.

40. (Previously Presented) A method as claimed in claim 37 wherein the gas extraction apparatus is operatively coupled at a lower region of the panel relative to the location of the gas inlet.

41. (Previously Presented) A method as claimed in claim 37 wherein the panel itself comprises a plurality of panels.

42. (Previously Presented) A method as claimed in claim 4 wherein the flushing gas is atmospheric air.

43. (Previously Presented) A method as claimed in claim 4 wherein the container is provided with apparatus for monitoring and controlling the pressure of gas in the container.

44. (Previously Presented) A method as claimed in claim 4 further comprising the step of monitoring the concentration of residual gas in the container.

45. (Previously Presented) A method as claimed in claim 18 wherein the flow and/or total pressure of gases within the container is monitored and controlled.

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46. (Previously Presented) A method as claimed in claim 18 wherein a majority of the residual gas present in the container is extracted.

47. (Previously Presented) A method as claimed in claim 18 further comprising the step of absorbing/adsorbing at least part of the residual gas extracted from the container into/onto an absorption/adsorption material.

48. (Previously Presented) A method as claimed in claim 47 wherein substantially all of the extracted residual gas is absorbed/adsorbed into/onto the absorption/adsorption material.

49. (Previously Presented) A method as claimed in claim 47 further comprising the step of one of washing the absorption/adsorption material, decomposing the residual gas on the absorption/adsorption material and discarding the absorption/adsorption material.

50. (Previously Presented) A method as claimed in claim 18 wherein the step of accessing the container involves:

opening an end door of the container; and

operatively coupling a panel to the container at the end door opening, and operatively coupling a gas inlet and a gas extraction device to the panel so that the container is sealed during the removal of the flushing gas and the residual gas from the container.

51. (Previously Presented) A method as claimed in claim 50 wherein the flushing gas is introduced via the gas inlet.

52. (Previously Presented) A method as claimed in claim 50 wherein gas is extracted via the gas extraction device.

53. (Previously Presented) A method as claimed in claim 50 wherein the gas extraction means is operatively coupled at a lower region of the panel relative to the location of the gas inlet.

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54. (Previously Presented) A method as claimed in claim 50 wherein the panel itself comprises a plurality of panels.

55. (Previously Presented) A method as claimed in claim 18 wherein the flushing gas is atmospheric air.

56. (Previously Presented) A method as claimed in claim 18 wherein the container is provided with apparatus for monitoring and controlling the pressure of gas in the container.

57. (Previously Presented) A method as claimed in claim 18 further comprising the step of monitoring the concentration of residual gas in the container.

58. (Previously Presented) A method as claimed in claim 21 wherein the flow and/or total pressure of gases within the container is monitored and controlled.

59. (Previously Presented) A method as claimed in claim 21 wherein a majority of the residual gas present in the container is extracted.

60. (Previously Presented) A method as claimed in claim 21 further comprising the step of absorbing/adsorbing at least part of the residual gas extracted from the container into/onto an absorption/adsorption material.

61. (Previously Presented) A method as claimed in claim 60 wherein substantially all of the extracted residual gas is absorbed/adsorbed into/onto the absorption/adsorption material.

62. (Previously Presented) A method as claimed in claim 60 further comprising the step of one of washing the absorption/adsorption material, decomposing the residual gas on the absorption/adsorption material and discarding the absorption/adsorption material.

63. (Previously Presented) A method as claimed in claim 21 wherein the step of accessing the container involves:

opening an end door of the container; and

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operatively coupling a panel to the container at the end door opening, and operatively coupling a gas inlet and a gas extraction apparatus to the panel so that the container is sealed during the removal of the flushing gas and the residual gas from the container.

64. (Previously Presented) A method as claimed in claim 63 wherein the flushing gas is introduced via the gas inlet.

65. (Previously Presented) A method as claimed in claim 63 wherein gas is extracted via the gas extraction apparatus.

66. (Previously Presented) A method as claimed in claim 63 wherein the gas extraction apparatus is operatively coupled at a lower region of the panel relative to the location of the gas inlet.

67. (Previously Presented) A method as claimed in claim 63 wherein the panel itself comprises a plurality of panels.

68. (Previously Presented) A method as claimed in claim 21 wherein the flushing gas is atmospheric air.

69. (Previously Presented) A method as claimed in claim 21 wherein the container is provided with apparatus for monitoring and controlling the pressure of gas in the container.

70. (Previously Presented) A method as claimed in claim 21 further comprising the step of monitoring the concentration of residual gas in the container.

71. (Previously Presented) Apparatus as claimed in claim 28 further comprising absorption/adsorption material for absorbing/adsorbing residual gas extracted from the container.

72. (Previously Presented) Apparatus as claimed in claim 71 wherein the absorption/adsorption material comprises an absorption/adsorption bed including activated carbon to which at least part of the extracted residual gas attaches at its surface and in its pores.

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73. (Previously Presented) Apparatus as claimed in claim 28 wherein the residual gas removal apparatus also comprises a panel arranged in use to be coupled to the enclosure in a sealing manner, the gas inlet and the gas extraction apparatus operatively coupled or mounted to the panel.